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AUTHOR Ellington, Henry
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ABSTRACT

This booklet is the third of three sequels to "A Guide to the Selection of Instructional Methods." Following a brief introduction, characteristics, strengths, and weaknesses of five group learning techniques are examined: (1) buzz sessions and similar small-group exercises; (2) class discussions, seminars, and tutorials; (3) participative exercises of the game/simulation/case study type; (4) mediated feedback/discussion sessions; and (5) group projects. Situations in which group learning can make a useful contribution to the educational process are then discussed. These include the use of group learning in teaching or developing higher cognitive objectives, problem-solving and decision-making skills, creative thinking, communication skills, interpersonal skills, and affective objectives. Finally, the role of the teacher in group learning is described. An annotated list of three references recommended for further reading is included. (MES)

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A Guide to the use of Group Learning Techniques

Introduction

This booklet and the two other booklets that accompany it ("A guide to the use of mass instruction techniques" and "A guide to the use of individualised learning techniques") are sequels to booklet number 2 in this series, "A guide to the selection of instructional methods", which it is suggested should be read *before* the present booklet.

In "A guide to the selection of instructional methods", it is shown how the selection of appropriate instructional methods should be the second key step in any systematic approach to course or curriculum design, following the formulation of the instructional aims and objectives (see booklet on "Educational objectives"). It is also shown how instructional methods can be divided into three broad groups, namely *mass instruction techniques, individualised learning techniques* and *group learning techniques*. In this booklet, we will take a much more detailed look at the third of these three groups, namely *group learning techniques*. First, we will examine some of the most widely used group learning techniques, identifying their main characteristics and discussing their respective strengths and weaknesses. Then we will discuss some of the situations in which group learning can make a useful contribution to the educational process. Finally, we will take a brief look at the role of the teacher in group learning.

The main group learning techniques

In this section, we will discuss five of the most common group learning techniques, namely *buzz sessions and similar small-group exercises, class discussions, seminars, tutorials, etc, participative exercises of the game/simulation/case study type, mediated feedback/discussion sessions* and *group projects*. Within each of these categories, it is, of course possible to adopt a wide range of approaches and tactics, but, as we will see, it is also possible to make a number of generalisations, and it is on these that we will concentrate.

Buzz sessions and similar small-group exercises

Buzz sessions are short participative sessions that are deliberately built into a lecture or larger group exercise in order to stimulate

discussion and provide student feedback. In such sessions, small sub-groups of two to four persons spend a short period (generally no more than five minutes) intensively discussing a topic or topics suggested by the teacher. Each sub-group then reports back on its deliberations to the group as a whole, or sometimes combines with another sub-group in order to share their findings and discuss the implications. One variation of the buzz group approach is the *one-two-four snowball technique*. Here, the members of a class or large group are first asked to respond individually to a question, then asked to form pairs in order to look for differences in these responses, then asked to form groups of four in order to arrive at a consensus response. As in the basic buzz group technique, each group of four is then asked to report on its findings to the class or group as a whole.

Some strengths of small-scale group sessions of this type.

(i) Buzz groups and similar small-group sessions constitute an excellent method of introducing variety into a lecture or formal presentation, thus helping to overcome the problems that can arise due to the limited *attention span* of students (see the section on lectures in "A guide to the use of mass instruction techniques"). Appropriate use of such sessions forces the students to undergo a radical change in their thought processes, thus helping to stop their attention from lapsing.

(ii) Such sessions can be used to achieve a wide range of objectives, both cognitive and non-cognitive. They can, for example, be used to develop oral communication and interpersonal skills, as well as being ideal for helping students to develop their powers of decision-making, evaluation and divergent thinking.

(iii) Such sessions also serve as an ideal vehicle for getting students actively involved in a lesson, thus increasing the effectiveness of the learning that takes place.

(iv) They also provide a teacher with a useful mechanism for obtaining feedback from a class.

Some weaknesses of small-scale group sessions

The main limitation of small-scale group sessions of this type is that they are not really suitable for use as a front-line teaching method in their own right, since they cannot, by themselves, be used to teach the basic facts and principles of a subject. Thus, they should only be used in a *supportive* role, in conjunction with other methods such as lectures.

Class discussions, seminars, tutorials, etc

This class of techniques covers a wide range of activities designed to promote discussion between a teacher and a group of students, or within a group of learners.

Class discussions generally take the form of a *controlled discussion* in which the teacher is at all times firmly in control of the situation, either allowing the class to ask questions and controlling the way in which these are discussed, or else guiding the class through a structured discussion of some sort by asking carefully-chosen questions, providing appropriate prompts, and so on. Such discussions can be used in a variety of contexts, e.g. as a follow-up to an expository session such as a lecture or the viewing of a film or video, as a class revision session, as a debriefing session for a game, simulation or participative case study, or as a teaching method in their own right.

Seminars can take a number of forms, and are generally run on somewhat less-restricted lines than class discussions, with the group members themselves having much more control over the course and content of the discussion. One common method of running a seminar is to base it on an essay, paper or prepared talk presented by one of the students in the group, with the group then discussing the presentation in depth. Another method is to run the seminar as a *free group discussion* of a particular topic, the group either being given broad guidelines on how the discussion should proceed or being left to decide this for themselves. Another variation of the seminar approach is the *fishbowl technique*. Here, half the members of the class involved sit in an inner circle and conduct a discussion while the remainder sit in an outer circle and act as non-participating observers; both sections of the group then combine for a general discussion of what occurred. Yet another approach to the organization of a seminar is *brainstorming*. This involves group members in spontaneously noting down or suggesting a range of possible solutions to a problem or question posed by the teacher, e.g. "What items would be absolutely essential if you were marooned on a desert island?" Initially, the suggestions are compiled without comment, and the group as a whole then evaluates the various suggestions and modifies or rejects them in the light of the ensuing discussion. 'Brainstorming' is not only very useful for stimulating discussion, but also for acting as an *icebreaker* at the start of a seminar by actively involving every participant right at the beginning. Once the 'ice' has been broken, the group's discussion will probably be a good deal more free and involve more students than might otherwise be the case.

Group *tutorials* can also take a variety of forms. One common form is the *working tutorial*, in which the class (or a section thereof) tackle course-related tasks set by the teacher or tutor, obtaining help or guidance if they experience difficulties. Another is the *problem-raising tutorial*, in which the members have the opportunity to ask their tutor about any matters relating to the course with which they are having problems.

Some strengths of class discussions, seminars and tutorials

(i) Class discussions, seminars and tutorials can be used to achieve a wide range of educational objectives, both of the cognitive and of the non-cognitive variety. They can, for example, be used to build on *lower-cognitive* objectives *(knowledge* and *comprehension)* that have been achieved in lectures or through individualised learning by providing a vehicle for achieving *higher-cognitive* objectives such as *application, analysis, synthesis* and *evaluation* in the areas in question. They can also be used to develop communication and interpersonal skills, and to achieve a wide range of affective objectives such as showing students that there are generally several ways of looking at an issue or making them more tolerant of the views of other people.

(ii) They enable relevant topics to be examined in great depth or discussed at considerable length.

(iii) Like buzz sessions and similar exercises, they have the great advantage of *getting the actual learners actively involved in the learning process*, since they are, by definition, participative rather than passive.

Some weaknesses of such methods

(i) With all group learning methods of this type, there is always the danger that some of the members of the class or group will not take an active part in the exercise, leaving all the thinking or speaking to others. Thus, if such an exercise is to be fully effective, it is necessary to take steps to ensure that *everyone* takes part – either by careful structuring or control and/or by limiting the size of the group. As a general rule, a group should be no larger than about 10 if it is to act as an effective vehicle for promoting group interaction and developing the full range of group skills, and, ideally, it should be somewhere between four and six.

(ii) Building group learning sessions such as group tutorials or seminars into a curriculum can cause timetabling and logistical difficulties because of the fact that they generally involve

the class being split up, thus making extra demands on staff support and accommodation.

(iii) One major drawback of subject-based tutorials and seminars is that there is often a tendency for the teacher to become over-dominant, and, in some cases, to use the session as a 'mini-lecture'. If this happens, the opportunity to achieve the full range of higher-cognitive and other objectives of which such sessions are capable will almost certainly be lost.

Participative exercises of the game/simulation/case study type

The spread in the use of games, simulations and participative case studies to virtually every sector of education and training has been one of the great success stories in educational technology during the last fifteen years. The use of such exercises in tertiary education is covered in some detail in a separate booklet in this series ("How games and simulations can be used in tertiary education"), so we shall limit ourselves here to a brief discussion of their main characteristics, strengths and weaknesses.

Exercises of this type can be divided into three basic groups, namely *games* (which involve competition and have rules) *simulations* (which are operational representations of real-life or hypothetical situations of some sort) and *case studies* (which are in-depth examinations of specific situations of some sort). In addition to these three basic types, there are also a number of 'hybrid' types of exercise, e.g. *simulation games* and *simulated case studies*. All these different types of exercise are described in more detail in "How games and simulations can be used in tertiary education.

Some strengths of games, simulations and case studies

(i) Exercises of the game/simulation/participative case study type constitute one of the most powerful vehicles at the disposal of the teacher for achieving a wide range of higher cognitive and non-cognitive objectives. They can, for example, be used to help students develop their powers of analysis, synthesis, evaluation, problem-solving, decision-making and creativity, and are also ideal for developing communication and interpersonal skills and for achieving a wide range of affective objectives (e.g. bringing about desirable attitude changes). Also, the use of simulation techniques can give students access to a whole range of learning situations that would otherwise simply not be practicable (e.g. use of computer simulations to carry out simulated experiments in genetics, macro-economics or social engineering).

(ii) By their very nature, such exercises have an extremely high 'learner involvement' factor – one of the features that makes them such effective vehicles for learning.

(iii) If well designed, games, simulations and case studies can be highly stimulating and motivating, and are generally greatly enjoyed by the participating students. This again increases their value as vehicles for learning. Indeed, students will often perform quite demanding tasks associated with the work of a game, simulation, etc. quite cheerfully – tasks that they would certainly not be so happy to perform if they were set as conventional class or home exercises.

(iv) Exercises of this type constitute an ideal vehicle for cross-disciplinary work, thus helping to prepare students to work in a world where the ability to operate across conventional disciplinary barriers is a very real advantage.

Some weaknesses of such exercises

(i) Although exercises of the game/simulation/case study type are ideal for achieving many higher cognitive and non-cognitive objectives, they are not really suitable for teaching the basic facts and principles of a subject, something that is best done using more conventional methods. Thus, their use in teaching such basic facts and principles should be restricted to a purely supportive role – e.g. for providing illustrations of the applications of facts or principles, or acting as vehicles for reinforcement of learning.

(ii) Games and simulations can be difficult to fit into a tight curriculum, particularly in the case of extended exercises. Also, they can pose logistical problems in terms of accommodation and staff support.

(iii) There is also a danger of using such exercises for the wrong reasons, e.g. using them as 'diversions' or 'time fillers' rather than for some specific *educational* purpose. Also, with some so-called 'educational games', it is possible for students to play them *purely as games*, without deriving any worthwhile educational benefit, because the 'educational' and 'gaming' elements are not fully integrated. (A number of commerically-available card games tend to have this weakness to some extent, as do many board games).

(iv) If a game or simulation is to be of any real use in a given educational situation, it must not only be capable of achieving the desired educational outcomes but must also be properly matched to the target population with which it is to be used; i.e. it must be of a suitable *level*. It is, however, very

unusual to find an exercise that is ideally suited to the purpose one has in mind, so it may be necessary to carry out a certain amount of adaptation or modification, or even to 'start from scratch' and design a completely new exercise. Obviously, this requires a certain amount of expertise and (preferably) some previous experience.

Mediated feedback/discussion sessions

Another important class of group learning techniques includes all those that involve mediated feedback on and discussion of an activity of some sort. One well-known example is *microteaching*, which is widely used in the training of teachers. In microteaching, attention is focussed on specific teaching skills, which the trainee teacher practices for short periods (from five to twenty minutes) with a small group of pupils (usually four to seven). The session is recorded, usually on videotape, and is then played back to the trainee teacher, normally in the presence of other trainees, in order to obtain immediate feedback and catalyse discussion of the performance. The resulting group feedback (together with the supervisor's comments and any observations made by the actual pupils) help the student teacher to analyse his or her performance, and thus enable him or her to restructure the lesson in order to teach it to a second group of pupils. Again, this is followed by immediate video replay, so that further analysis and evaluation can take place in order to identify any areas where further improvement could be made. By employing this 'teach-reteach' cycle, it is possible to give the student teacher the opportunity to put into immediate practice what he or she has learned from the video replay and from the peer group and other feedback on the previous attempt.

There are many variations of microteaching, and indeed, such video-replay methods for analysing performance are now used in many areas of skills training other than teaching practice. Examples include the recording of interviews or other interactive situations for subsequent analysis, cirticism and discussion by a class.

Some strengths of mediated feedback/discussion sessions

(i) Use of mediated feedback followed by class or group discussion provides an ideal vehicle for in-depth examination of a whole range of situations and processes (individual presentations, simulated interviews, group dynamics situations, and so on).

(ii) Such techniques can be used to develop a wide range of useful skills, including the skills associated with the situation or process being examined and the various skills that are de-

veloped by the subsequent critical discussion (communication skills, evaluative skills, and so on).

(iii) Again, such techniques have an extremely high 'learner involvement' factor.

Some weaknesses of such techniques

(i) One of the main drawbacks of such techniques is that some students may well find them rather off-putting at first; thus, getting the most out of such techniques may require considerable skill and empathy on the part of the organising teacher.

(ii) One obvious disadvantage is that the technique requires suitable hardware to be available, and may also require back-up by technical staff.

(iii) Use of techniques of this type may again cause timetabling problems, particularly if a class has to be split up for the work.

Group projects

One group learning technique that has become increasingly popular in recent years is the *group project*. Here, students carry out project work in small cooperative groups (generally containing between 3 and 6 people) rather than as individuals. Such group projects can be carried out as teaching exercises in their own right (e.g. for providing part of the practical or case study work of a course) or can be built into other, larger exercises (e.g. in the form of *syndicate* work).

Some strengths of group projects

(i) Group projects can be used to achieve the same basic range of objectives as individual projects, and, in addition help the participants to develop the various interpersonal skills that are so essential for success in later life. Furthermore, the constructive exchange of ideas and division of labour that are generally associated with group projects can make such exercises far more useful learning experiences than individual projects, with the group being able to produce work of a quality that would probably be completely beyond even the best students if they had to work on their own.

(ii) Group projects are again ideal vehicles for cross-disciplinary work, an aspect of education that is assuming more and more importance as traditional subject barriers become less rigid than was the case in the past.

Some weaknesses of group projects

(i) One obvious weakness of such exercises is the problem of making sure that all the members of the group play their full part in the work; in such projects, it is often all too easy for a lazy or incompetent member to 'opt out', leaving his or her colleagues to do all the hard work. It is therefore important to try to build into such projects measures which help ensure that everyone pulls his or her weight.

(ii) An associated problem is that of *assessing* a group project. While it is obviously fairly easy to assess the work of the group *as a whole*, it is generally much more difficult to assess the work of the individual members unless the group is constantly monitored by supervisory staff (something that can be counter-productive). One solution is to build an element of *peer assessment* into the assessment process, e.g. by asking every member of the group to award every other member a mark reflecting his or her evaluation of their respective contributions of the work.

The different contexts in which group learning can be used

The potential contribution that group learning techniques can make in a particular educational or training situation can often be assessed by carrying out a critical analysis of the *aims* and *objectives* of the course or programme in question. If the desired outcomes include the development of such things as oral communication skills, interpersonal skills, and certain desirable attitudinal traits, then group learning techniques may well be more suitable for teaching towards such outcomes than mass-instructional and individualised learning methods. Let us now look at some of the situations where such techniques can be particularly useful.

Use of group learning in teaching towards higher cognitive objectives

In the booklets on mass instruction and individualised learning techniques, it is shown that such techniques are well suited for achieving objectives of the *lower cognitive* type, i.e. in teaching the basic facts and principles of a subject. When it comes to developing a full *understanding* of such material, on the other hand, or demonstrating its *applications*, group learning methods may well be more appropriate vehicles. It is because of this that most colleges and universities back up their formal lectures with suitable *tutorials*, *seminars* and other group learning activities.

Objectives that lie even higher in the cognitive domain (e.g. those that involve *analysis, synthesis* or *evaluation)* are again often most effectively developed using group learning techniques of some sort.

Use of group learning in developing problem-solving and decision-making skills

Group methods have also proved to be useful in *problem-solving* sessions, with the students either working individually and interacting with the teacher, or working as a cooperative group in tackling a project of some sort. In such activities, the subject matter is often very specific to the student's course of study. However, exercises that foster the development of *decision-making skills* through the use of small-group methods need not necessarily be so content related. Many management training courses, for example, make use of exercises which enable the participants to improve their decision-making ability through activities in which the *processes* by which the decisions are reached are much more important than the actual *content* of the exercise.

Use of group learning in developing creative thinking

In courses whose objectives include the development of *creative thinking skills* (e.g. the ability to perceive new relationships within a topic, or the ability to produce imaginative solutions to given problem situations) group methods have again often been found to be extremely useful. In situations where wide-ranging and/or lateral thinking are required, for example, ideas can be 'bounced around' within the group for comment and criticism, with the result that individual group members benefit from the perceptions of others and from the subsequent interaction and discussion.

Use of group learning in developing communication skills

Certain group learning techniques are ideal vehicles for the development of (or creation of an awareness of the importance of) the various skills that are associated with *oral communication, written communication* and *non-verbal communication.*

Oral communication skills

Students are frequently criticised for their inability to express themselves coherently. Group techniques are particularly well suited to helping them to overcome these deficiencies, and, in recent years, a number of exercises have been designed specifically for this purpose. These provide a situation in which students can develop *oral communication skills* (such as presenting and defending arguments and making a meaningful contribution to discussions) and through which they can generally build up their confidence. Ideally, a

planned series of such exercises is desirable if significant and long-lasting improvements are to be achieved.

Written communication skills

A more traditional use of group methods is to provide a forum in which written work such as essays, laboratory reports, assignments and project reports can be discussed. The purpose of such discussions can be twofold: first, to discuss the content of the written work for the mutual benefit of the group; second, to discuss the form of the written work in terms of such things as structure, sequence and clarity of expression. In many cases, open discussion of the latter may well encourage and catalyse improved efforts.

Non-verbal communication skills

Finally, group exercises may help the participants to develop an appreciation of the importance of *non-verbal communication* and to cultivate useful skills in this often-neglected area. This can be achieved through observation of the activities of the group by the teacher, by the actual group members, by independent observers, or via a videotape recording made for later analysis and discussion. Such techniques can be used for a variety of purposes, e.g. for demonstrating the nature of non-verbal communication to psychology students, or for helping trainee managers to recognise and develop the various non-verbal skills that play such an important part in interviews, meetings etc.

Use of group learning in developing interpersonal skills

The various skills that are required in order to operate effectively within a group or social situation are often best developed by group learning methods. In most cases, students leaving school or college enter jobs which require them to work in close cooperation with other people. For some, this may involve skills of leadership, administration and delegation, for others, the ability to work as part of a team, while for others it may involve social skills such as those needed in order to deal with the general public. Again, group methods are an ideal method for putting 'theory into practice', and a whole range of simulation and role play activities can be used with small groups in order to help develop such interpersonal skills.

Use of group learning in achieving affective objectives

Research has shown that exposition-based and individualised learning methods are not particularly effective in achieving objectives that lie in the *affective domain* (see booklet on "Educational objectives"). If, for example, it is wished to help students to develop desirable attitudes, it is found that this can be done far more

effectively by putting them in situations where they are exposed to views different from their own and subjected to criticism by their peers.

The vital role that can be played by group methods in this area is self-evident. Such methods can provide an environment in which free discussion can break down prejudices and misconceptions and increase awareness of the range of factors that are involved in any given situation. An example might be the use of group methods to increase empathy towards a minority section of the community.

Group activities can also be an extremely powerful means of integrating an individual's cognitive and affective development within the context of a meaningful and relevant learning experience.

The role of the teacher in group learning

As is shown in "A guide to the selection of instructional methods", the role of the teacher in group learning situations is significantly different from his/her conventional role, and calls for skills and adaptability which may, for some, be difficult to achieve. First, the teacher must exhibit good *organisational skills* in planning and structuring the learning experience. Thereafter, his or her role may be more adaptive and less authoritarian or autocratic than in exposition-based teaching situations. Depending on the form, content and structure of the group exercise being used and its particular educational aims and objectives, the teacher's role may include acting as *group leader* (giving strong direction to the discussion), *group facilitator* (generating self-expression and interaction within the group), *neutral chairman* (controlling the procedure, but not contributing substantially to the discussion), *consultant* (providing assistance and/or information as and when needed) or simply *observer*. In some group exercises, another important aspect of the role of the teacher is in *debriefing* the session. This involves going over with the participants the events that occurred during the group session and 'pulling out' any important points that arose, either in connection with the content of the discussions or regarding the processes and interactions within the group itself. Obviously, the points that are highlighted in such a debriefing should be closely related to the main teaching objectives of the exercise.

Further Reading

1. *A Handbook of Educational Technology*, by F Percival and H I Ellington; Kogan Page, London; 1984 (This introductory text

on the principles and practice of educational technology deals with group learning in some detail; it also contains a comprehensive bibliography that lists a wide range of useful books and articles on the subject).

2. *Aims* and *Techniques of Group Teaching*, by M L J Abercrombie; Society for Research into Higher Education, Guildford; 1979. (One of the most useful basic texts on the subject of group learning).

3. *53 interesting things to do in your seminars and tutorials*, by S Habeshaw, T Habeshaw and G Gibbs; Technical and Educational Services, Ltd; 1984. (Another excellent book that offers a large number of useful hints to the practising teacher or lecturer).